

Abstract

In a decarbonation process for removing carbon dioxide from a carbon dioxide-containing gas with the use of an amine compound-containing absorbing solution, an amine compound accompanying a decarbonated exhaust gas is efficiently recovered in the following manner: A water washing section is constituted in two stages, a first-stage water washing section 64 and a second-stage water washing section 65. In these water washing sections, recovery of the amine compound accompanying the decarbonated exhaust gas is performed sequentially. Regeneration tower refluxed water is supplied as washing water to the second-stage water washing section 65. Washing water is withdrawn from the second-stage water washing section 65 and supplied to the first-stage water washing section 64. Demisters 83, 84 and 85 are provided at outlets of a carbon dioxide absorption section 73, the first-stage water washing section 64 and the second-stage water washing section 65. An absorbing solution mist and a washing water mist accompanying the decarbonated exhaust gas are removed by these demisters.